

Product Information Note

ControlEdge PLC – Easy Integration and Flexible Deployment



Honeywell’s advanced Programmable Logic Controller (PLC) technology improves control performance while offering greater flexibility and lower costs. The new ControlEdge™ PLC improves integration with Experion®, HMIs and third-party devices, and reduces configuration efforts by utilizing the industry-accepted IEC 61131-3 programming languages, as well as remote configuration and firmware updates.

Our new PLC is part of the ControlEdge family, a next generation family of controllers providing unprecedented connectivity through all levels of process and business operations. The result is optimized operations and maintenance efficiencies that release personnel from manual processes. ControlEdge PLC is one of the first controllers supporting Honeywell’s iiOT-ready initiative.



Honeywell’s ControlEdge Programmable Logic Controllers (PLCs) provide robust control in a wide range of discrete applications. This advanced line of controllers, compliant with the IEC 61131-3 standard, offers impressive scalability for different environments.

ControlEdge PLCs can be deployed as part of Honeywell’s unique LEAP™ project execution approach, enabling optimum solutions to be found for automation projects while eliminating complexity, saving time and lowering costs.

With the ControlEdge solution, industrial facilities are assured of utmost cost and performance benefits over the life of the asset. They will also realize significant value from simplified configuration and integration across their control architecture.

Key Highlights

The ControlEdge PLC is based on the proven 900 platform of racks and power supplies, currently used by HC900.

- First PLC with Universal I/O for greater configuration flexibility
- Designed and developed by Honeywell, a global leader in process automation for more than 40 years
- Tightly integrated with Experion, Honeywell’s best-in-class Distributed Control System (DCS), Supervisory Control and Data Acquisition (SCADA) system, and safety system
- Native controller redundancy
- Optionally redundant power supplies
- Two variants of power supplies: 60W 24VDC and 110/240VAC
- Leverages Honeywell’s LEAP project methodology and Universal I/O for greater configuration flexibility
- I/O racks of various sizes
- Integration with third-party systems and devices such as motors, drivers, and compressors
- Connects to Human-Machine Interface (HMI) through Modbus and OPC UA protocols
- Compatible with leading open network standards such as Modbus and OPC UA
- Powerful IEC 61131-3 programming environment
- Best-in-class cyber security ensuring the safety of the system, personnel and critical information
- Single vendor service and support across PLC, DCS and Safety

Universal I/O for Project Flexibility

Honeywell's automation experience and innovative LEAP methodology are the key to increased flexibility – allowing industrial firms to optimize project execution. With LEAP, companies can realize significant capital savings on the total installed automation costs of a project, reduce rework costs, and minimize schedule delays.

Essential to the LEAP approach is the implementation of 16-channel Universal I/O modules (UIO), which offer flexibility in I/O type, eliminating the need for custom PLC hardware alignment with different I/O configurations. Any field signal can be connected to any I/O channel. Deployment of UIO provides greater flexibility for late stage changes, such as configuration and design changes on a typical automation project.

The UIO module reduces equipment needs by reducing or eliminating marshalling, and because there is no need for hardware with different I/O configurations. The result is significant savings in spares inventory and associated costs.

Embedded OPC UA Protocol

As the protocol of choice for IIoT, OPC Unified Architecture (UA) provides secure, reliable and vendor-neutral transport of raw data and pre-processed information from the sensor and field level up to the manufacturing level. Utilizing this open protocol – embedded directly in the controller itself as a client and a server – Honeywell's ControlEdge PLC provides users with the flexibility to choose between interfaces while simplifying integration with a wide range of third-party systems and devices.

Controller Redundancy

Honeywell's redundancy is ready to go. There is no need to program any differently from a non-redundant controller. ControlEdge PLC takes away the complexity. No additional infrastructure is required to synchronize the data between CPMs.

Robust Cyber Security

Our embedded cyber security supports compliance, reduced risk, and availability. Features include secure boot to prevent uploading of unauthorized software, a built-in firewall to reduce exposure to denial-of-service attacks and message flooding, encryption for critical data with easy configuration, and authentication and authorization through a trusted certificate and robust item subscription model.

At the forefront of industrial safety and security, Honeywell offers Industrial Cyber Security Solutions and Managed Services that help protect the availability, safety and reliability of industrial control systems and site operations. Honeywell improves business performance by reducing the risk of incidents, faults and failures that disrupt normal operations. This means

customers can have greater confidence in the security of their PLC installation.

Remote Terminal Panels

Optional DIN rail mounted Remote Terminal Panels (RTPs) are available for use with pre-wired cables to reduce installation time and labor expense. Three cable lengths are available: 1.0m, 2.5m and 5m. RTPs switch field power to allow module removal and installation under controller power.

Scalable to a Broad Range of Applications

Honeywell's PLC solution enables you to configure a control system with functionality to suit your specific needs. The controllers are scalable not only in their speed of processing, but also in their performance characteristics. In addition, they offer networking options across different communication standards.

ControlEdge PLC is designed to optimize small unit applications ranging from motor control and HVAC systems, to pumps, generators and more. It is also ideal for process industry applications such as waste water treatment, instrument air handling, coal and ash handling, chiller controls, and drying equipment.

Expert Service & Support

Honeywell has been recognized as an automation industry leader for more than four decades. Our technology is installed in some of the largest refineries, plants, mills and mines in the world. Honeywell automation systems are easy to install and use, and are the most reliable and scalable systems available.

Honeywell understands that knowledgeable support and implementation services—delivered when and where they're needed—are critical to the success of any automation project.

ControlEdge Builder — An Integrated Configuration Environment

ControlEdge Builder is ControlEdge PLC's integrated configuration tool to design, configure, program and maintain your PLC investment. ControlEdge Builder is fully compliant to IEC 61131-3, supporting all five programming languages.

- **Ladder Diagram (LD)**
- **Function Block Diagram (FBD)**
- **Structured Text (ST)**
- **Instruction List (IL)**
- **Sequential Function Chart (SFC)**

In addition to the basic function blocks that come with an IEC 61131-3 environment, ControlEdge Builder includes Honeywell designed function blocks derived from our extensive industry experience and family of market leading automation controllers.

Function blocks include PID, Device Control, Auto Manual, Fan Out, and Ratio Control, just to name just a few.

ControlEdge Builder is designed to work locally or remotely to the controller using TCP/IP. Personnel can program on site or from a remote central location to save time and mitigate the need for site work.

Remote Firmware Upgrades

Being able to remotely upgrade controller firmware is very important when there are hundreds of controllers geographically distributed. To account for low bandwidth, unreliable networks, remote firmware upgrading from ControlEdge Builder is a two-step process ensuring uptime of the controller and reliability of the result.

Remote Diagnostics

Just as important as being able to remotely program and upgrade ControlEdge PLC is being able to remotely diagnose the health of the PLC. ControlEdge Builder provides a high definition analysis of the health scenario, leading to fewer site visits.

Superior Integration Capability

With Honeywell technology, industrial sites have a flexible way to efficiently access data in a seamless manner, ensuring easy configuration and maintenance.

ControlEdge PLCs are tightly integrated with the Experion control system architecture. By partnering with an automation vendor offering both DCS and PLC solutions, users have a single point of contact for support and supply chain, substantially reducing CAPEX and OPEX.

Integration with Experion

Through use of open protocols, ControlEdge PLC is designed to work with any SCADA system. When combined with Experion, or Experion SCADA it becomes a superior solution. With support for up to 5,000 controllers per server and further server-based expansion through our patented Distributed System Architecture, DSA™, Experion is a highly scalable system with the highest level of reliability, safety and security.

Experion provides radically simplified SCADA configuration and superior operator and pipeline controller experience through template-based Equipment. Experion can be configured and operated by 'equipment' like an air compressor or a pumping station rather than merely 'points'. When you match an Experion Equipment template with a ControlEdge PLC, the cost of configuring the full solution is simplified even further. Experion and ControlEdge PLC have been designed to solve automation requirements in the oil and gas, mining, water and other

industries. For more information, refer to the *Experion SCADA PIN*.

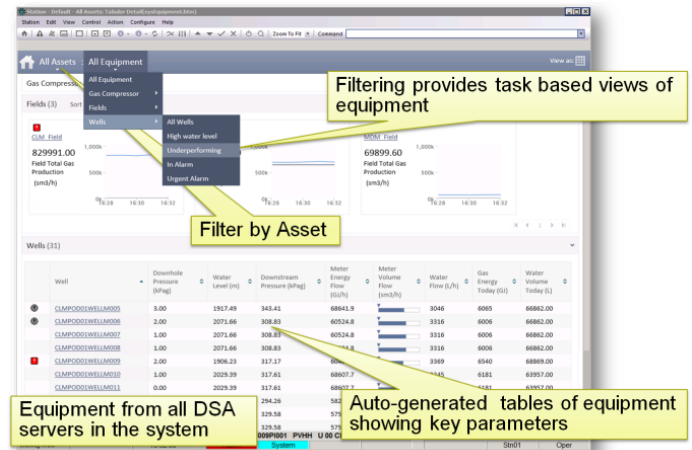


Figure 2. Experion Equipment Display

Experion HMIWeb Display Builder is the object orientated tool for building and maintaining PLC HMI displays. It includes an object browser to easily navigate and make changes, a property window to enter and view parameters and a structured list of shapes. Shapes can be dragged and dropped to quickly engineer new displays and modify existing ones.

The Experion HMI incorporates features developed from extensive consideration of human factors by the Abnormal Situation Management consortium. Operators' situational awareness is optimized, fatigue minimized and quick identification and response to abnormal situations promoted. These features are available both in standard system displays and user built displays where the HMIWeb Solution Pack library is used. For more information, refer to the *Experion HMI PIN*.

For More Information

Learn more about ControlEdge PLC – Easy Integration and Flexible Deployment at our website www.honeywellprocess.com or contact your Honeywell account manager.

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PN-16-06-ENG

June 2016

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